

Remarks/Arguments

The Office Action dated November 28, 2007 has been received and carefully studied.

The Examiner objects to the abstract under 35 U.S.C. 132(a) because it introduces new matter into the disclosure.

This objection is respectfully traversed. All of the information contained in the abstract is disclosed in the specification. Specifically, on page 10, paragraph [0026] states "An N-bit switch, where it receives a path-routed packet, uses bits 25 through 24+N of the routing header (bits 0 through (N-1) of the turn pool) as the switches turn value." Paragraph [0021] on page 8 states that "each switch has N^2+1 (this has been amended to read 2^N+1) ports, where N is the number of bits of turn pool consumed by a switch." Paragraph [0020] on page 8 defines turn value as "the position of an output port relative to the input port on which a packet is received, and contains the number of relative ports to be skipped between the input port and the output port." It then recites several examples utilizing this concept. Thus, based on these three passages, it can be seen that the switch receives a packet, and based only on the data within the packet, extracts the turn value. The switch knows its value of N, based on the number of ports that it has, as explained in paragraph [0021]. This turn value then determines the output port, as described in paragraph [0020]. Thus, the abstract does not add any new matter, it simply restates information presently in the specification.

The Examiner further objects to the abstract because it recites two embodiments instead of the whole invention. By the accompanying amendment, an amended abstract has been submitted. The applicant has removed reference to separate embodiments. Again, no new matter has been added.

The Examiner objects to several informalities in the claims, specifically with respect to claims 1, 2, and 4. The accompanying amendment corrects these informalities by removing the term "adapted to" from claim 1.

The Examiner rejects claims 1, 2, 4 and 14-26 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner states that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This rejection is respectfully traversed. As stated above, this subject matter is disclosed in the specification. Specifically, on page 10, paragraph [0026] states "An N-bit switch, where it receives a path-routed packet, uses bits 25 through $24+N$ of the routing header (bits 0 through $(N-1)$ of the turn pool) as the switches turn value." Paragraph [0021] on page 8 states that "each switch has N^2+1 (this has been amended to read 2^N+1) ports, where N is the number of bits of turn pool consumed by a switch." Paragraph [0020] on page 8 defines turn value as "the position of an output port relative to the input port on which a packet is received, and contains the number of relative ports to be skipped between

the input port and the output port." It then recites several examples utilizing this concept. Thus, based on these three passages, it can be seen that the switch receives a packet, and based only on the data within the packet, extracts the turn value. The switch knows its value of N, based on the number of ports that it has, as explained in paragraph [0021]. This turn value then determines the output port, as described in paragraph [0020]. Thus, the language of claim 1 and 14, that the switch, using only "said packet field data and the number of said ports", determines the appropriate output port, is clearly described in the specification. In fact, if one were to implement the system disclosed in this specification, one would easily see that there is no need for lookup tables within the switches, and that the output port is chosen based on the header information and the number of ports in the switch.

The Examiner rejects claims 1, 14-16, 18 and 25-26 under 102(e) as being anticipated by Droz et al (U.S. Patent Application Publication No. 2002/0136202). The Examiner states that Droz discloses a method of routing a packet from a source to a destination within a fabric having at least one switch, said switching having a plurality of ports, said method comprising: encapsulating said packet with a header, wherein said header comprises packet field data; transmitting said encapsulated packet from said source to said switch; receiving said encapsulated packet by said switch on one of said ports; determining an appropriate output port using said packet field data and the number of said ports; and transmitting said encapsulated packet from said switch via said appropriate output port.

This rejection is respectfully traversed. The Examiner, in describing the disclosure of Droz, neglected to note that claims 1 and 14 (and newly amended 18) require that the switch use only the packet header and the number of ports to determine the output port. Droz does not meet this limitation. First of all, Droz discloses in paragraph [0024] that the "packet processing units PPU 11 to PPU M convert a given destination address into a corresponding next hop physical address. This is normally performed by using a routing table containing information needed for the conversion." In other words, Droz uses information, other than solely the packet header and the number of ports to determine the output port. Further proof of the complexity required to convert the destination address to a physical address is given in paragraph [0009], where Droz admits that "packet processing is a resource intensive procedure that requires fast processors and instant memory access." The disclosure of Droz is focused on optimizing the use of a plurality of packet processing units (PPUs), using identifier vectors and load sharing. There would be no need for these optimizations if the output port were selected based only on the packet header and the number of ports, because the required computations are trivial. Thus, Droz cannot be claimed to disclose the generation of an output port using only the packet header and the number of ports.

The applicant notes that claim 18 lacked the word "only" in the recitation of the determining step. This deficiency has been corrected by the present amendment.

By virtue of the accompanying amendment, applicant believes that claims 1, 14, and 18 are all in condition for

allowance, since all require that the output port be determined using only the packet information and the number of ports. Droz does not disclose such a feature. The associated dependent claims are believed allowable by virtue of their dependence on one of the aforementioned independent claims.

The Examiner rejects claims 2, 4, 13 and 19-24 under 35 U.S.C. §103(a) as being unpatentable over Droz. The Examiner admits that Droz does not disclose that the packet field data comprises a credit length, a bit count, a turn pool, an operation, a PID index, an MTU, an EUI or other claimed field data. The examiner then notes that it is obvious to include or any field data to the packet data especially if the packet data field contains reserved bits that are not used and left for the purpose of adding any needed data field that allows adding new features to the packet.

This rejection is respectfully traversed. By virtue of their dependence on claims 1, 14 or 18, these claims are all believed to be in condition for allowance.

The Examiner rejects claim 17 as being unpatentable under 35 U.S.C. §103(a) over Droz in view of Higginson et al (WO 94/00937). The Examiner states that Droz discloses all the subject matter with the exception of explicitly disclosing means to modify the packet field data prior to transmitting the packet. The Examiner states that Higginson discloses a system where the switch modifies the packet before its transmission to the destination by stripping off the header.

This rejection is respectfully traversed. As stated above, Droz does not disclose that the output port is determined based only on the packet field data and the number of ports in the switch. Furthermore, Higginson does not disclose this limitation. Thus the combination of these references cannot make claim 17 unpatentable since all of the elements of independent claim 14 are not disclosed by the references.

Reconsideration and allowance are respectfully requested in view of the foregoing.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert C. Frame', written over a horizontal line.

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